



1641

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FORM

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Total Number of Pages in This Submission

Application Number	10/527,831	RECEIVED
Filing Date	1/9/2006	
First Named Inventor	North	MAR - 6 2006
Art Unit	1641	
Examiner Name		TECH CENTER 1600/2900
Total Number of Pages in This Submission	6	Attorney Docket Number 316187

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): 6 Foreign Patent Documents and 32 non-patent literature documents
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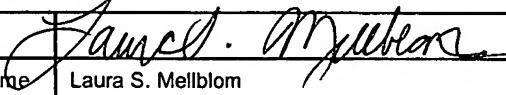
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm	FAEGRE & BENSON LLP		
Signature			
Printed Name	Richard A. Nakashima		
Date	2/27/06	Reg. No.	42,023

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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I file the Application of:

KATHRYN NORTH

Application No.: 10/527,831

Filed: January 9, 2006

For: GENOTYPE SCREEN FOR ATHLETIC  
PERFORMANCE

MAR 6 2006

TECH CENTER 1600/2900

Examiner: Not Yet Known

Art Unit: 1641

**INFORMATION DISCLOSURE STATEMENT**  
(37 C.F.R. §§ 1.97(b)(3) and 1.98)

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The Examiner is requested to consider the references noted on the enclosed Form PTO/SB/08A (Substitute for form 1449A/PTO) during examination of the above-identified application. These references are submitted for the Examiner's consideration and are submitted pursuant to the duty of disclosure under 37 C.F.R. § 1.56. In submitting these references, no representation is made or implied that the references are or are not material to the examination of the application. The Examiner is encouraged to make his or her own determination of materiality.

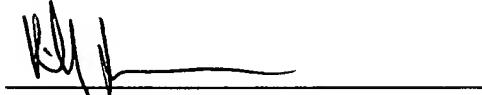
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Attorney Docket No. 316187

Should the examiner have any questions concerning the relevance of any reference cited in this disclosure, please contact the undersigned attorney.

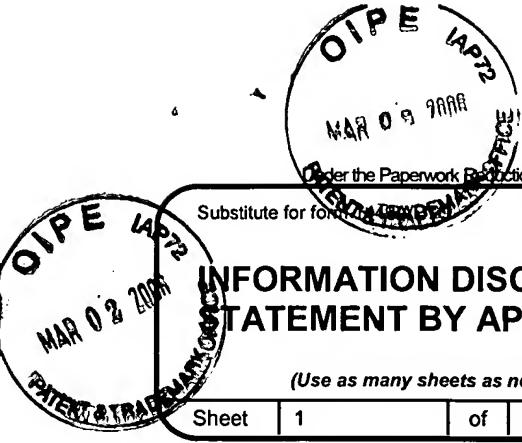
Dated: February 27, 2006

Respectfully submitted,



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Richard A. Nakashima  
Registration No. 42,023  
Customer No. 35657



PTO/SB/08A (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Sheet	1	of	4	Application Number	10/527,831
				Filing Date	1/09/2006
				First Named Inventor	North
				Art Unit	1641
				Examiner Name	
				Attorney Docket Number	316187

## **U.S. PATENT DOCUMENTS**

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## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
	10	EP 0320308 B1	11/3/1993	Backman		X
	11	WO 89/09284	10/5/1989	Walder		X
	12	GB 2 202328 A	9/21/1988	Soderlund		X
	13	WO 88/10315	12/29/1988	Gingeras		X
	14	EP 0329822 B1	6/8/1994	Davey		X
	15	WO 89/06700	7/27/89	Miller		X

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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

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Application Number	10/527,831
Filing Date	1/9/2006
First Named Inventor	North
Art Unit	1641
Examiner Name	

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Attorney Docket Number 316187

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	16	BLANCHARD, ANDREW, et al., "The Structure and function of a-actinin," Journal of Muscle Research and Cell Motility 10, 280-289 (1989)	
	17	BEGGS, Alan H., et al., "Cloning and Characterization of Two Human Skeletal Muscle a-Actinin Genes Located on Chromosomes 1 and 11" The Journal of Biological Chemistry, Vol. 267, No. 13, Issue of May 5, pp 9281-9288, 1992	
	18	NAVE, RUDIGER, et al., "Interaction of a-actinin and nebulin in vitro," Elsevier Science Publishers, Vol. 269, No. 1, 163-166, August 1990	
	19	PAPA, IRIS, et al., "Alpha actinin-CapZ, an anchoring complex for thin filaments in Z-line," Journal of Muscle Research and Cell Motility 20, pgs. 187-197, 1999 Kluwer Academic Publishers	
	20	SALMIKANGAS, PAULA, et al., "Myotilin, a novel sarcomeric protein with two Ig-like domains, is encoded by a candidate gene for limb-girdle muscular dystrophy," Human Molecular Genetics, 1999, Vol. 8, No. 7, pgs. 1329-1336 1999 Oxford University Press	
	21	BELLIN, Robert M., et al., "Molecular characteristics and Interactions of the Intermediate Filament Protein Synemin," The Journal of Biological Chemistry, Vol. 274, No. 41, Issue of October 8, pgs. 29493-29499	
	22	MCGREGOR, ALISTAIR, "Identification of the Vinculin-binding Site in the Cytoskeletal Protein a-actinin" Biochem (1994) 301, pgs. 225-233 (Printed in Great Britain)	
	23	HANCE, Jacqueline, "a-Actinin-2 Is a New Component of the Dystrophin-Glycoprotein Complex" Archives of Biochemistry and Biophysics, Vol. 365, No. 2, May 15, pgs. 216-222, 1999	
	24	OTEY, Carol A., et al., "Mapping of the a-Actinin Binding Site within the B1 Integrin Cytoplasmic Domain," The Journal of Biological Chemistry, Vol. 268, No. 28, Issue of October 5, pgs. 21193-21197	
	25	FUKAMI, et al., "a-Actinin and Vinculin Are PIP2-binding Proteins Involved in Signaling by Tyrosine Kinase" The Journal of Biological Chemistry, Vol. 269, No. 2, Issue of January 14, pgs. 1518-1522, 1994	
	26	SHIBASAKI, Futoshi, et al., "Phosphatidylinositol 3-kinase binds to a-actinin through the p85 subunit" Biochem Journal (1994) 302, pgs. 551-557 (Printed in Great Britain)	

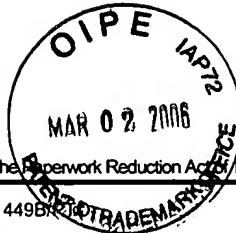
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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*Application Number* 10/527,8

*Filing Date* 1/9/2006

First Named Inventor: North

First Named Inventor: North

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NON-PATENT LITERATURE DOCUMENTS

NON-PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
	27	POMIES, PASCAL, et al., "CRP1, a LIM Domain Protein Implicated in Muscle Differentiation, Interacts with a-Actinin" The Journal of Cell Biology, Volume 139, Number 1, October 6, 1997, pgs. 157-168		
	28	POMIES, PASCAL, et al., "Purification and Characterization of an a-Actinin-Binding PDZ-LIM Protein that is Up-regulated during Muscle Differentiation" The Journal of Biological Chemistry, 1999 The American Society for Biochemistry and Molecular Biology, Inc., Vol. 274, No. 41, Issue of October 8, 1999, pgs. 29242-29250		
	29	NORTH, KATHRYN, et al., "A common nonsense mutation results in a-actinin-3 deficiency in the general population" 1999 Nature America Inc., Vol. 21, April 1999, pgs. 353-354		
	30	NOWAK, Martin A, et al., "Evolution of genetic redundancy" Letters to Nature Vol. 388 10 July 1997, pgs. 167-171		
	31	CHAN, YIU-MO, et al., "Human Skeletal Muscle-Specific a-Actinin-2 and -3 Isoforms Form Homodimers and Heterodimers in Vitro and in Vivo" Biochemical and Biophysical Research Communications 248, 1998 Article No. RC 988920, pgs. 134-139		
	32	RIEDER, MARK J., "Sequence variation in the Human Angiotensin Converting Enzyme" Nature Genetics, Vol. 22, May 1999, pgs. 59-62		
	33	GAYAGAY, George, et al., "Elite Endurance Athletes and the ACE I allele -- the role of Genes in Athletic Performance" Hum Genet (1998) 103 pgs. 48-50		
	34	MONTGOMERY, H. E., et al. "Human Gene for Physical Performance" scientific correspondence Nature Macmillan Publishers Ltd 1998 Vol. 393 May 21, 1998, pgs. 221-222		
	35	MYERSON, SAUL, et al. "Human Angiotensin I-converting enzyme gene and Endurance Performance" The American Physiological Society 1999 8750-7587/99, pgs. 1313-1316		
	36	NAZAROV, Igor B., et al. "The angiotensin Converting Enzyme I/D polymorphism in Russian athletes" European Journal of Human Genetics (2001) 9, pgs. 797-801		
	37	WOODS, DAVID, et al., "Elite Swimmers and the D allele of the ACE I/D Polymorphism" Hum Genet (2001) 108, pgs 230-232		

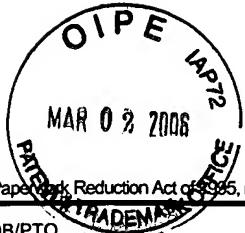
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	38	MELTZOFF, A., "Rational Imitation in Preverbal Infants" Nature, Vol. 415, 14 February 2002, pgs. 755-756	
	39	RANKINEN, TUOMO, et al., "The Human Gene Map for Performance and Health-related Fitness Phenotypes: the 2001 update" MSSE Special Report, 0195-9131/02/3408-1219, 2002 by the American College of Sports Medicine	
	40	PERUSSE, LOUIS, et al., "The Human Gene Map for Performance and Health-related Fitness Phenotypes: The 2002 Update," Medicine & Science in Sports & Exercise, the American College of Sports Medicine 0195-9131/03/3508 pgs. 1248-1264	
	41	MILLS, MICHELLE, et al., "Differential expression of the actin-binding proteins, a-actinin-2 and -3, in different species: implications for the evolution of functional redundancy" Human Molecular Genetics, Vol. 10, No. 13, pgs 1335-1346	
	42	EIZEMA, KARIN, et al., "Differential Expression of Equine Myosin Heavy-chain mRNA and Protein Isoforms in a Limb Muscle" Vol. 51(9): The Journal of Histochemistry & Cytochemistry, 2003, pgs. 1207-1216	
	43	WALKER, G. TERRANCE, et al., "Isothermal in vitro amplification of DNA by a Restriction enzyme/DNA Polymerase System" Vol. 89, pgs. 392-396, January 1992 Applied Biological Sciences, pgs. 392-396	
	44	KWOH, D. Y., et al., "Transcription-based amplification system and detection of amplified human immunodeficiency virus type 1 with a bead-based sandwich hybridization format" Biochemistry, Proc. Natl. Acad. Sci. USA, Vol. 86, pgs. 1173-1177, February 1989	
	45	OHARA, OSAMU, et al., "One-sided Polymerase Chain Reaction: The amplification of cDNA" Pro. Natl. Acad. Sci. USA, Biochemistry, Vol. 86, pgs. 5673-5677, August 1989	
	46	NORTH, KATHRYN N., et al., "Deficiency of a Skeletal Muscle Isoform of a-Actinin (a-Actinin-3) in Merosin-Positive Congenital Muscular Dystrophy" Neuromusc. Disord., Vol. 6, No. 4, pgs. 229-235, 1996	
	47	FRIDEN, J., et al., "Eccentric Exercise-induced Injuries to Contractile and Cytoskeletal Muscle Fibre components" Acta Physiol Scand 2001, 171, Scandinavian Physiological Society, pgs. 321-326	

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